REMARKS/ARGUMENTS

Claims 1-12 and 15-22 are pending and stand under final rejection. Claims 1-12, 15, 21 and 22 stand rejected as obvious under 35 USC 103(a) in view of Grinshpun et al. Claims 16-20 stand rejected as obvious under 35 USC 103(a) in view of Grinshpun et al. in combination with Malone.

Applicant respectfully traverses these rejections in view of the remarks below. The following remarks first lay out the guidelines by which the Applicant understands Office is to interpret claims and then two issues of the presently pending rejections which Applicant believes warrant withdrawal of the rejections.

Claim Interpretation Guidelines

The MPEP defines guidelines by which the Office is to interpret claims during examination:

"Claims must be interpreted as broadly as their terms reasonably allow. This means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification." MPEP §2111.01, first paragraph.

"When not defined by the applicant in the specification, the words of a claim must be given their plain meaning. In other words, they must be read as they would be interpreted by those of ordinary skill in the art." MPEP §2111.01, third paragraph.

"Applicant may be his or her own lexicographer as long as the meaning assigned to the term is not repugnant to the terms well known usage." MPEP §2111.01, fourth paragraph.

Therefore, Applicant understands that the Office is to examine a claim and interpret meanings as broadly as possible, in view of any limitations that the specification or one of ordinary skill in the art would place on the interpretation of the words of the claim. Interpretations must be consistent with well known usage.

When a term is not precisely defined in the specification, a standard dictionary may be used to define the claim. (Irah H. Donner, "*Patent Prosecution: Practice & Procedure Before the U.S. Patent Office*", Third Edition, Bureau of National Affairs, Inc., Washington , D.C., 2003, page 1152 which includes a citation to *In re Barr*, 444 F.2d 588, 170 USPQ 339

(C.C.P.A 1971), (The CCPA used Hackh's Chemical Dictionary to define "phenyl radical" in an absence of a definition in the specification))

Issue #1: Whether Grinsphun discloses a panel that fits fully within a cavity defined by cavity walls.

Each claim of the present Application specifies a panel that "fits fully within a cavity defined by cavity walls." In each rejection, the Office relies on Grinshpun et al. ("Grinshpun") to provide teaching of a panel that fits fully within a cavity defined by cavity walls (*see*, Final Rejection dated 5 October 2004, section 3, second paragraph). Applicant respectfully traverses this conclusion and presents two specific sub-issues for support:

Issue 1(a): Whether Grinshpun discloses a panel that fits fully within "a cavity" defined by cavity walls.

Applicant previously argued that the presently claimed invention was distinct from that in Grinshpun because the panel of Grinshpun necessarily spans multiple cavities (*see*, response dated 15 June 2004). The Office found the argument unpersuasive and maintains the rejection of the present claims. Applicant finds the reasoning set forth by the Office to be unfounded and contrary to a reasonable meaning of "a cavity" and "cavity wall" based on specific definitions set forth in the specification and dictionary definitions.

Applicant established in their response dated 15 June 2004 that "a cavity" means a *single* cavity. Rather than restate that explanation here, since it does not appear to be in dispute, Applicant refers back to their response and incorporates it herein by reference. Each claim in the present Application further requires that the panel apply sufficient pressure against the cavity walls to as to frictionally retain the panel in the cavity.

In that same response, Applicant argued that Grinsphun disclosed a panel that, by its very design, necessarily spanned *multiple* cavities. Since each claim in the present Application requires a panel that fits fully within a single cavity, Grinshpun's teaching was outside the scope of the present invention. Applicant further argued that each claim in the present Application must apply sufficient pressure against the cavity walls so as to frictionally retain the panel within the cavity. Since the panel of Grinshpun not only spans multiple cavities but holds itself in place by clamping onto a cavity wall – a portion of the panel must extend outside the cavity to establish friction (in the form of clamping) against the cavity walls. This, too, is contrary to the presently claimed invention. The Office has found such an argument unpersuasive.

The Office asserts that Applicant has used the "open language limitation 'comprising' in the claim" to justify including additional structural limitations with a cavity. Applicant respectfully disagrees with the Office's reasoning. Claim 1 of the present Application uses the word "comprising" only in the context of describing a building panel and not a cavity. In fact, none of the Claims of the present Application use the word "comprising" in the context of describing a cavity. Therefore, the basis for the Office's argument justifying inclusion of additional structural limitations in a cavity is unfounded.

For a reasonable interpretation of the claims, the Office must look first to any definitions provided in the specification. The present Application specifically addresses framework structures such as those disclosed in Grinshpun on page 1, lines 16-32. The framework structures described in the present Application comprise multiple studs or joists spaced a certain distance apart. Applicant further identifies that within the context of such frameworks "*studs and joists act as cavity walls*." (page 1, lines 20-21, emphasis added). The present Application further defines a cavity as "a volume between two studs or two joists." (page 1, lines 22-23). The present application teaches that a cavity can contain "obstacles, such as conduit and plumbing pipes, along cavity walls" (page 11, lines 21-20). The cavity can also contain obstacles that extend within a cavity along the end of a panel (page 11, lines 25-26). However, studs and joist remote from a cavity wall or panel end do not qualify as such obstacles. Therefore, the present Application specifically defines that studs and joists in building frameworks are cavity walls and that a cavity is a volume between two cavity walls.

Grinshpun describes frameworks with studs defining an outer frame and "inner support members" between the studs (column 1, lines 9-13). Grinshpun identifies support members as preferably also being studs, as is common in the industry (column 2, lines18-22). Grinshpun does not describe any other types of support members. Therefore, Applicant fails to find any disclosure in Grinshpun of a framework comprising anything but a series of studs – the volume between which are fall within the definition of "cavities" according to definitions set forth in the present Application.

The panel in Grinshpun necessarily extends over a support member since it, by necessary design, has a groove that receives a support member (see, e.g., column 1, lines 45-48). Since the panel of Grinshpun extends over a support member, which satisfies the definition of a cavity wall, the panel cannot fit within a single cavity -- it extends beyond the volume defined by two cavity walls.

What's more, the panel of Grinshpun has at its edges tabs that define a partial groove into which a support member fits. A feature of the partial groove is that the tabs extend partially over the support member against which the panel terminates (*i.e.*, the cavity wall) to abut a tab of an adjacent panel. This tap clearly extends beyond the cavity in which the panel of Grinshpun resides. Recall, the panel of the present invention must exert force against the cavity wall; therefore, the member partially covered by the panel tab must be a cavity wall of the cavity in which the panel resides.

Applicant believes the Office's conclusion that the panel of Grinshpun fits within a single cavity is contrary to the plain meaning of "cavity" based on definitions in the present invention for "cavity" and "cavity wall."

Furthermore, Applicant believes the assertion that the panels of Grinshpun fit within a single cavity is contrary to the plain meaning of cavity based on the broadest applicable definition of a standard dictionary. Merriam-Webster Unabridged Dictionary defines a cavity as "a three-dimensional discontinuity in the substance of a mass or body; a space within a mass; a space hollowed out" (see accompanying copy from the Merriam-Webster dictionary, found on the Internet). Applicant believes that a single cavity cannot include a vertical support member in the context of Grinshpun's framework since the vertical support member will divide the volume into distinct volumes – the volume between any two support members is not accessible by a volume between any other combination of two support members without leaving one volume and entering the other. Combining divided volumes, as the Office attempts to do in defining a single cavity in the context of Grinshpun, is counter to the Dictionary definition of cavity since the combined but divide volume is not a single "three-dimensional discontinuity" or "space."

Grinshpun acknowledges that it is standard in the industry to use studs as both the outer frame and support members within a framework (column 1, lines 11-2 with column 2, lines 18-22). There is no suggestion in Grinshpun that the vertical support members are of any different dimension, particularly depth dimension as defined under the next sub-issue, than the studs defining the outer frame. Therefore, since the only specific teaching is to use studs throughout, the only reasonable assumption is that the vertical members are of similar dimension to the studs. This assumption is further supported in the figures of Grinshpun that illustrate a framework – all of the vertical members are of similar dimension. Since the support members are of similar dimension, a volume defined by any two support members (or studs) is not accessible by a volume defined by any other combination of two support

members (or studs) without exiting one volume to enter the other. These are two distinct volumes, hence two distinct cavities. Therefore, the Office's argument that intervening vertical support elements are simply "structural limitations" within a single cavity is also counter to the dictionary definition of cavity.

The design of the Grinshpun panel requires it to extend beyond the volume defined by two support members. Therefore, the Grinshpun panel must extend outside of the volume defined by the support member it spans. The Grinshpun panel necessarily spans more than one cavity. It goes counter the definition of 'cavity" to try to combine unconnected volumes together to create a single cavity.

Finally, the panel of Grinshpun has tabs that extend over the outermost vertical members between which the panel resides. The tabs, if nothing else, extend beyond a single cavity. Studs remote from the panel cannot act as cavity wall in the context of Claim 1 since the panel must apply force against the cavity walls. Therefore, in view of the tabs alone the Grinshpun panel does not fit within a single cavity.

In summary, Applicant believes the Office's argument that Grinshpun's panel fits within a single cavity is unfounded and contrary to the plain meaning of the word "cavity." The Office's basis for providing for "structural limitations" within a cavity is unfounded. A reasonable interpretation of the teaching in Grinshpun cause an artisan of ordinary skill in the art to conclude the volume between any two vertical members is a cavity distinct from any other volume or cavity and that the panel of Grinshpun spans multiple cavities.

Issue 1(b): Whether Grinsphun discloses a panel that fits "fully within" a cavity defined by cavity walls.

Even under an assumption that the panels of Grinshpun can reasonably be deemed to span only a single cavity, Applicant believes the Grinshpun patent does not disclose a panel that fits "fully within" a cavity defined by cavity walls. The Grinshpun panel, by necessary design, extends outside of the volume defined by cavity walls – both as the panel extends and spans a support element that reside in a groove of the panel and with the tabs on the vertical edges of the Grinshpun panel that extend over a vertical support member to buttress against a tab from an adjoining panel. Since the Grinshpun panel, by necessary design, extends outside of a volume defined by cavity walls, it does not disclose, teach or suggest a panel that fits "fully within" a cavity defined by cavity walls.

Claim 1 of the present Application requires that the claimed building panel fit "fully within" a cavity. The present Application does not provide an express definition for "fully within," beyond that shown in the Figures; nor does Applicant believe that such a phrase is a term of art within the building industry. Therefore, Applicant believes the plain meaning of this phrase is properly elucidated from a standard dictionary. As such, Applicant provides copies from Webster's Third New International Dictionary (Unabridged), Merriam-Webster's Unabridged Dictionary, and Merriam-Webster's general on-line dictionary showing definitions for "fully" and "within."

Fully. Each source provides two possible definitions for the word "fully": (1) Completely, or in a full manner or degree; and (2) at least. The second definition, in each source, provides an exemplary usage. It is important to note that each exemplary usage for the second definition identifies a portion of a whole (i.e., "fully half the class" and "fully nine tenths of us"). That is, the second definition of "fully" (i.e., "at least") requires identifying that portion of an object to which "fully" refers. The phrase "where said panel fits fully within a cavity defined by cavity walls" identifies no less than the entire panel. There is no reference, e.g., to "fully half the panel" or "fully two thirds the panel," as would be necessary for the meaning "at least" to apply. Therefore, the only reasonable definition that applies to "fully" in the context of the present Claim is the first definition: "Completely."

Within. The term "within" is a preposition in the pertinent phrase of Claim 1. Each source provides three possible definitions. The second in each is temporal and, clearly, does not apply in the context of Claim 1. The remaining two indicate a meaning of enclosed by, contained by or to the inside of.

In view of these dictionary definitions, and that of "cavity," presented earlier, Applicant asserts that the plain meaning of "fully within a cavity defined by cavity walls" is: *completely enclosed by the three-dimensional space defined by cavity walls*. Therefore, Claim 1, as well as each Claim of the present invention, requires a building panel that *fits completely within the three-dimensional space defined by cavity walls*.

Figs. A-C, below, help illuminate the plain meaning of "fully within a cavity defined by cavity walls." Figure A below illustrates cavity 10 defined by cavity walls 20 and 30. Figure B illustrates element 40 that is "fully within" cavity 10 since it is completely enclosed by the three-dimensional space 10 defined by cavity walls 20 and 30. Figure C illustrates element 50 that is not "fully within" cavity 10 since the portion of thickness "T" extends outside the three-dimensional space defined by cavity walls 20 and 30.

Fig. A

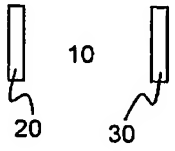


Fig. B

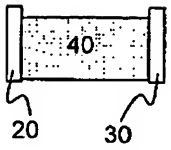
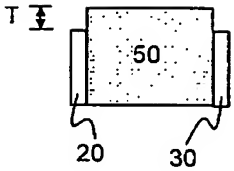


Fig. C



This interpretation is consistent with each figure of the present Application that shows a building panel within a cavity (*i.e.*, Fig. 2C, Fig. 4B, and Fig. 5B). Each of these figures illustrate a building panel fully within a cavity – no portion of the building panel extends outside of the three dimensional space defined by the cavity walls.

Grinshpun et al.

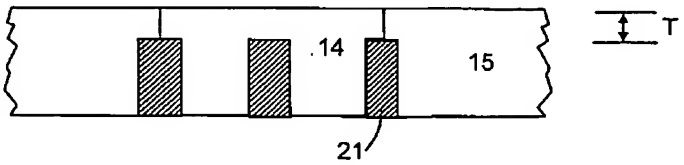
The Office concludes that Grinshpun et al. discloses a panel that fits fully within a cavity defined by cavity walls (*see*, Final Rejection dated 5 October 2004, section 3, paragraph 2). The Examiner finds a cavity defined by cavity walls in the form of a frame, referencing column 3, lines 1-5 for support (*see*, Final Rejection, Section 3, paragraph 2, lines 5-8). Applicant fails to find mention of a cavity in the cited section. Nonetheless, Applicant assumes the Examiner to believe that the cavity walls are the outer-most vertical members of a frame against which a given panel terminates (NOTE: Claim 1 of the present Application requires that the panel apply sufficient force against the cavity wall so to frictionally the panel within the cavity. Therefore, the panel must contact the cavity walls).

The Examiner then refers to Figure 6, to support the present definition of a building panel, (*see*, Final Rejection, Section 3, paragraph 2, lines 8-9) and concludes that the panel in Figure 6 fits fully within the cavity. Applicant struggles, even while trying to see this argument in favor of the Office's position, to envision how the panel of Figure 6 (or any other panel illustrated or described in Grinshpun et al.) can fit *fully within* a cavity as described in Grinshpun et al.

Panels of Grinshpun et al. serve the purpose of providing insulation to wall construction (*see*, column 1, lines 62-67). Grinshpun et al. provides foam insulation panels that span a wall assembly framework to act as insulation for the resulting wall construction. By design, the panels of Grinshpun et al. have grooves into which vertical support members of a framework fit (*see, e.g.* ., column 2, line 53 – column 3, line 9, as well as each figure).

Importantly, the grooves in which the vertical member fit have a depth that is necessarily less than the thickness of the panel. Grinshpun et al. makes no distinction between the depths of the grooves in the body of the panels versus at the ends of the panels. On the contrary, each figure shows the grooves to be of identical depth. Furthermore, Grinshpun distinctly states that when two panels of the Grinshpun et al. invention abut one another in a wall construction, the grooves at the abutting edges together form a wider groove which fits tightly about the intervening support member, as illustrated in Figure 2B (*see*, column 3, lines 27-37 and Figure 2B). Therefore, the panel of Grinshpun et al. necessarily extends outside of the end-most vertical supports (i.e., the "cavity walls"). Figure 2B, partially reproduced below as Fig. D, shows panel 14 butting up to panel 15 at support member 21. Support member 21 serves as a "cavity wall" for each of panel 14 and 15.

Fig. D



The panels of Grinshpun fit into a cavity in a fashion similar to element 50 in Fig. C (above) – both the Grinshpun panel and element 50 extend outside of the three dimensional space of a cavity defined by cavity walls by a portion of thickness "T". As such, neither element 50, nor the Grinshpun panel "fit fully within" a cavity defined by the pertinent cavity walls.

Figures 2A and 2B of Grinshpun et al. illustrate the general shape of the polymer foam sheet for the invention of Grinshpun et al. The general shape in these figures is not simply an embodiment, but illustrates the *general shape of the invention* (*see*, column 3, lines 10-11). Since there is no teaching to the contrary in Grinshpun, the foam sheets (*i.e.*, panels) of Grinshpun et al. are designed with an end grove tab that extends outside of a cavity defined by vertical support "cavity walls." As such, there is no disclosure in Grinshpun of a panel that can "fit fully within a cavity defined by cavity walls," as the presently claimed invention specifically requires. The panels of Grinshpun et al. necessarily extend outside a cavity defined by cavity walls according to the teaching of Grinshpun.

While it is conceivable to design a wall framework that has periodic vertical members of greater depth than other vertical members, and that those deeper vertical

members serve as cavity walls for the panels of Grinshpun – such a concept is foreign to the disclosure of Grinshpun et al. and seems foreign to standard framework construction. While maintaining true to the teachings of Grinshpun, the panel of Grinshpun panel must extend outside of the three dimensional spaced defined by the cavity walls – and as such does not fit fully within the cavity defined by the cavity walls. In fact, to design a panel that does fit fully within a cavity defined by cavity walls goes contrary to the panel design required by Grinshpun et al.

Applicant fails to see how the remaining cited reference can remedy this teaching of Grinshpun without going counter to the teachings of Grinshpun.

In view of these remarks, Applicant respectfully requests withdrawal of the obviousness rejections of Claim 1, and all other claim of the present invention since each depend from and are narrower in scope than Claim 1, because all rejections depend on the mistaken fact that Grinshpun et al. discloses a panel that fits fully within a cavity defined by cavity walls.

Issue #2: Does teaching on column 4, lines 65-66, in combination with Figure 6, of Grinshpun et al. render obvious a panel that comprises at least one conformable panel domain that allows the panel to reversibly bend form a planar to non-planar configuration?

Claim 4 of the present Application requires that at least one panel domain of the panel of Claim 1 is a conformable panel domain that allows the panel to reversibly bend from a planar to a non-planar configuration. The Examiner concludes that Grinshpun et al. discloses such a panel and points to column 4, lines 65-66 for support. Applicant respectfully traverses the rejection and conclusion and believes the cited section of Grinshpun et al. is insufficient to support the Examiner's position. Furthermore, Applicant fails to find teaching in Grinshpun et al. that is suggestive of a panel capable of reversibly bending from a planar to a non-planar configuration.

The section of Grinshpun et al. cited by the Examiner is descriptive of Fig. 6 of Grinshpun et al. The panel in Fig. 6 has rigid foam 60 as a major portion of the panel (column 4, lines 65-67). Fig. 6 reveals that an entire primary surface of the panel is made up of rigid foam 60. Without teaching otherwise, a "rigid" foam is not expected to bend without breaking. Since an entire primary surface of the foam in Fig. 6 is rigid foam, Applicant remains puzzled how the Examiner envisions such a panel can reversibly bend from a planar

to a non-planar configuration. Upon request for further explanation, the Examiner has only stated the fact that the panel in Fig. 6 has both rigid and compressible domains and then concluded the compressible domains allow the panel to bend reversibly from planar to non-planar. Applicant fails to see how the compressible domains, as positioned in Fig. 6 – or any of the other figures – can act as a hinge to allow reversible bending. If the positions of the compressible domains are not such that they can act as a hinge, the bending action must hinge along a rigid foam – which is counter to the concept of a "rigid" foam.

In view of these remarks, Applicant respectfully requests withdrawal of the obviousness rejection of Claim 4, not only because it is patentable over Grinshpun et al. for the reasons described for Claim 1 but also because there is no basis in Grinshpun to direct a skilled artisan to consider a panel that can reversibly bend from a planar to a non-planar configuration. Alternatively, Applicant respectfully requests the Examiner provide a more thorough explanation of how the compressible domains in Figure 6 of Grinshpun can facilitate the reversible bending of the panel in Figure 6 from a planar to a non-planar configuration.

Summary

In view of these remarks, Applicant respectfully requests reconsideration and withdrawal of the Final Rejection of claims 1-12 and 15-22 of the present Application. Alternatively, Applicant respectfully requests that the Examiner provide a more than cursory explanation of how the present arguments fail to warrant withdrawal of the rejection.

Respectfully submitted,

Steven W. Mork

Steven W. Mork
Registration No. 48,258
Phone: 989-636-8434

P. O. Box 1967
Midland, MI 48641-1967
SWM/ssp